

Amendments to the Specification:

Please replace the title as follows:

CONTROL APPARATUS FOR ON-VEHICLE GENERATOR AND ~~ON-VEHICLE POWER~~
~~SUPPLY SYSTEM USING SAME~~ THAT SENDS POWER FROM THE BATTERY TO THE
FIELD WINDING AND FROM THE FIELD WINDING BACK TO THE BATTERY

Please replace the paragraph beginning on page 1, line 11, with the following
rewritten paragraph:

Recently, there has been a rise in demands for both high power and high efficiency of
on-vehicle generators. To meet such demands, various countermeasures have been taken.
One proposed countermeasure is to use an on-vehicle generator in which a Rundel-type pole
core functioning as a rotor is provided and a permanent magnet is placed in a clearance
between ~~un~~uniform-uniform portions of the core so as to increase effective magnetic flux.

Please replace the paragraph beginning on page 1, line 26, with the following
rewritten paragraph:

In order to improve the field winding for high output power and high efficiency, there
is known a design technique of strengthening an excitation ampere turn value of the field
winding so that a maximized excitation field is obtained. Under such a circumstance, a
growing demand for shortening a time constant of the field winding has been created as
another design technique. Thus a current main ~~stream~~stream in the design begins with
selecting, as the field winding, smaller-number-of-turns and low-resistance winding, rather
than a multitudes-of-turns and high-resistance winding.

Please replace the paragraph beginning on page 8, line 7, with the following rewritten
paragraph:

In cases where the output voltage of the on-vehicle generator 1 is below a
predetermined target voltage, the voltage Vs outputted from the LPF 65 is lower than the

reference voltage V_{reg} , whereby the output voltage of the comparator 66 is at “high” level. In this condition, the two power transistors 61 and 62 both are in the on-state. Two current paths to allow the exciting current to flow therethrough are established. One is a path circulating from the positive terminal of the battery 9, a B-terminal, the power transistor 61, and to an ~~f1-terminal~~, f1-terminal, so that the exciting current flows into the field winding 4 from the battery 9. The other is a path circulating from the field winding 4, an f2-terminal, the power transistor 62, and to the negative terminal of the battery 9, so that the exciting current flows back to the battery 9 from the field winding 4. Using these two paths, the exciting current is supplied from the battery 9 to the field winding 4. Fig. 4 illustrates a direction of the exciting current from the battery 9 to the field winding 2 through the two paths stated above.

Please replace the paragraph beginning on page 8, line 34, with the following rewritten paragraph:

As described based on Fig. 1, in the conventional configuration in which the free wheel diode 104 is connected in parallel to the field winding 100, the magnetic energy temporarily preserved by the field winding 4 is converted into energy consumed as heat and others due to the circulating operation of the free wheel diode 104. When the magnetic energy ~~temporarily~~ temporarily preserved by the field winding 4 is denoted as P2, the following is established:

Please replace the paragraph beginning on page 9, line 31, with the following rewritten paragraph:

In this expression (3), the first term of the right side shows energy ~~retuned~~ returned to the battery 9 for storage, and the second term therein shows energy consumed by the resistance of the field winding 4 to be converted into heat when the regeneration is performed.

Please replace the paragraph beginning on page 9, line 35, with the following rewritten paragraph:

As understood from a comparison between the expression (2) explaining the conventional and the expression (3) explaining the configuration according to present embodiment, the energy dissipated into heat by the free wheel diode 104 in the conventional configuration is returned and stored in the battery 9 in this embodiment. Incidentally, because a relationship of $V_b \gg V_d$ is ~~established~~ established, an amount dissipated by the free wheel diodes is negligible.